THE WESTERN FARMER,

DEVOTED TO AGRICULTURE, HORTICULTURE, AND RURAL ECONOMY.

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Grafting and Inoculating.

The modifications resulting from the adhesion of the parts of plants, and trees fitting one another, are of great importance in studying the relations of different species, and the laws which regulate this operation are of high interest to us in an economical point of view; for it is upon a knowledge of these relations or affinities that a correct theory of grafting must depend, a work no less useful to the raiser of good fruit than its effects are wonderful to the physiologist. Adhesion consists in the perfect union or blending of the cellular tissues of two parts, which are supposed to have been originally distinct in their growing state; and it is to be met with in every class of plants.—Besides the ordinary causes of adhesion, resulting from some constant predisposition in the plants themselves to produce this effect in certain parts of their texture, we often meet with it in nature, where it has evidently been the result of accident. Two fruits, or two branches, by growing close together, will gradually join by the union of their tissues, and then continue to grow as one specimen. Now grafting is nothing more than the artificial production of the same effect. The art is reputed of Phœnician origin; and the Romans have left us many fabulous accounts of the wonders which, as they asserted, might be performed by it; none of which, however, are so wonderful as the simple truth itself. It has been customary, in all works on this subject, to describe the union of the graft and the stock as commencing between the libers, or inner layers of bark, in each; but De Candolle, the best writer on the physiology of plants in Europe, exposes the fallacy of this opinion, and has shown that it is their alburnums, or outermost layers of wood, which first unite. It is through the alburnum that the rising sap is conducted to the graft, and the adhesion of the libers cannot be effected until afterwards, when the descending sap returns into the stock by this channel. A graft never succeeds, excepting between such species as are nearly allied, or which at least belong to plants of the same natural family; and no credit is to be given to the accounts of fruits and flowers having become considerably changed by being grafted on plants of an opposite nature from themselves; such as the pretended case of a rose, on a black currant, being rendered black; or of a jessamine, on an orange, obtaining the scent of the latter. The only apparent exception to the law which requires that the graft and stock should be at least of the same family, occurs in certain parasites which are found on trees of different natural orders. The misletoe (those green nest-like bunches to be seen on some trees, particularly on the elm, in the western country,) which is a seeming exception in many particulars to the ordinary laws of vegetation, is a plant of this kind. But there is this very essential

difference between the manner in which the misletoe adheres to the tree upon which it lives, and the union of the graft and the stock: whilst the latter unite both by their wood and bark, the former unite by their wood alone. This parasite, requiring only a supply of the rising sap, which is much the same in all plants, is afterwards enabled to nourish itself by elaborating this material in its own organs; but then it can restore nothing to the tree upon which it is supported, owing to the want of union between the tissues of their barks. But although, generally speaking, grafting appears to produce no material change in the character of the plant, yet there are certain slight alterations which arise from this cause in particular cases; the size, habit, duration, and even flavor of the fruit being sometimes modified by it. Grafting is, in the economy of vegetation, what commerce is in the political arrangements of society: it creates nothing, but serves as a means of transporting and disseminating that which is most useful and most required. It is of some importance also to the botanist, enabling him to ascertain the capabilities of junction of plants in certain doubtful cases.

In closing our desultory remarks on the subject of grafting, inoculating or budding, we cannot, we think, too strongly recommend to the farmers and gardeners of this neighborhood, and of the western country generally, to pay more attention to this subject than they have hitherto been in the habit of doing. The operations of grafting and inoculating are soon learned by a little practice, and observation of others skilled in the process. For printed instructions, see article Fruit, in the Practical Farmer, Gardener & Housewife, p. 13. And if farmers would prefer buying the trees of nursery-men who may be depended upon for the best fruit trees, we subjoin the following article from the Cincinnati Chronicle of the 20th of this month, one of the intelligent editors of which excellent paper has not only much taste, but has had also some practice, on this subject:

Good Fruit most profitable.

Peaches were sold in our market this morning at prices ranging from six to fifty cents per half peck, and were of a corresponding value, or rather we should say, those at six cents were of no value at all: as when cooked, the only way they can be used, they are destitute of that fine, peculiar aroma, and rich flavor that belongs to the large genuine Lemon Clingstone, the Blood Peach, and other esteemed varieties for cooking. As the first cost of an inoculated tree, of the very best varieties of the Peach, is but thirty or forty cents, and as it is as easily grown as the most worthless wild sort, that now appears in our market, we hope those who raise fruit for this city will take the matter into consideration, and consult their own interest, as well as our tastes. Besides, it is actually less labor to pick for market two bushels of large Rareripes, than it is to gather one of the worthless little trash with which we are now supplied in such great abundance.

It is gratifying to state that we shall probably have, in a year or two, one of the best Peach markets in the world, as we happen to know that a few thousand of trees, inoculated with the very best varieties of Peaches and Rareripes, have been planted out in this city and vicinity since the spring of 1839: and that our enterprising nurserymen White, Ernst, Price, and Howarth, have, collectively, not less than 50,000 Peach trees growing, inoculated with the best varieties in the United States, a large proportion of which will be of suitable size for transplanting this autumn and next spring.

Care of Stock in Winter.

During the season when luxuriance smiles in our meadows, and the sources of pasturage are great, live stock are very easily managed, provided proper attention be paid in not overstocking the land; but when cold nights arrest nature in its bounties, and winter puts on its dreary garment, depriving the agriculturist of the advantage of pasturage, and rendering him dependent on the store which his foreknowledge dictates to him to heap up for the winter, it is then that he finds practical information not only desirable, but most important in directing him how to manage the stock in the best possible manner.

During winter, cattle should be confined either in yards, or closes with sheds attached to them, where the stock may take shelter in unfavorable weather, or in stalls tied up singly, with collars or with bows and chains.

For young growing stock intended for working or breeding, sheds, with court-yards, should be used, as nothing contributes more to their health and strength than giving them their liberty, and suffering them to range while young; but in doing which, care should be taken to keep them in good condition, as by being reduced in flesh in any season of the year, it injures both their growth and constitution. The latter end of October is about the time they are put into the yards, from twelve to twenty in a yard, according to its size. We consider twelve to be as many as should at any time be kept together. The kind of food given to animals should be suited to their several ages. In the habit of very young animals there abounds, and seems necessary for their welfare, a great proportion of fluid, and therefore most succulent food may be preferable for them; but when they are more advanced and vigorous, the digestive powers being stronger, and time being requisite for the process of growth, provision less nutritious, or of a coarser quality, may suffice. A dry kind of food agrees better with all animals in winter when the perspiration is less than in summer, during which season moister provisions seem more suitable. When fed on dry food, and more especially if the quality is coarse, the stock should be well supplied with water to promote its digestion in the stomach. It is, indeed, a good plan previously to moisten any hay given to cattle, and in a less degree even to horses. The food generally employed for this description of stock in the yard is hay, corn fodder, or hay and straw mixed; it is the practice of some, however, to use beets or turnips. We are of opinion that there is no way in which turnips or beets can be used with greater advantage to the farmer than by giving the young cattle a daily allowance during the first two or three winters.

When they begin to feed on turnips or beets, a gallon is sufficient, increasing the quantity to two gallons per day to each. These should be given the first thing in the morning in troughs or mangers, and again in the afternoon, and hay placed either in racks or cribs, morning and evening, after they have eaten the turnips. The white globe is the best to begin with, and when they will eat these readily, the Swede turnip may be given in the same way, but in less quantities. Turnips and beets should be carefully cut for calves in thin slices, as in square pieces there is danger of choking, while in the former there is none. One great advantage arising from this mode of feeding is, it teaches the young stock to become docile and quiet. When coming two years old they should be treated in the same manner, giving them more turnips; three pecks per day may be then given to them. When rising three, they will eat nearly a bushel per day, and will do very well with indifferent hay, but much straw should not be given except it be to tread under their feet for manure, or to litter them when tied up. Working oxen have been kept on oat or barley straw, turnips and beets, till after Christmas, when hay has been short, and have been kept in a good state of flesh if not

worked too hard. Care should be taken not to over-feed any cattle, nor to give more than they can eat up clean. If calves get too loose with turnips or beets, they must be more sparingly given.

In stall-feeding cattle, regularity of feeding is of the utmost consequence; indeed, of more than any unpractised person can conceive. Three times a day, precisely at the commencement of a certain hour, ought to be the regular period, and cattle, particularly if corn-fed, require their fill of water. The easy, contented, and improving disposition of the cattle, and small waste of provender attendant upon this regularity, is a source of constant satisfaction to a superintending proprietor. The advantages of stalls, particularly the double ones, is a consideration in two points of view: first, that cattle in a fattening stall require to be kept tolerably warm both day and night; and secondly, each beast gets an equal share of food, which is not the case when several are put together in a yard or close, the stronger beasts getting the greatest portion, while the weaker fall short of their allowance. The food on which cattle are fatted in the stall consists of turnips, together with hay, straw, oil-cake, oats, corn, rye-flour, &c.; but the more succulent kinds of food, as carrots, parsnips, potatoes, cabbages, mangel-wurzel, &c., are more generally employed.

Oil Cake has long been celebrated for fattening cattle, and is considered one of the speediest methods that can be adopted; it is usually broken into small pieces, and given in the quantity of half a gallon night and morning, mixed with chaff, bran, ground oats, barley, and other meals of an inferior quality.

Turnips also form a useful article for fattening cattle, but from their succulent nature, they are generally combined with cut hay, to which a little corn or rye meal should be occasionally added. The turnips are sometimes steamed, which is a very excellent method, but the general practice is to give them in a raw state, previously sliced. Half an acre of turnips is enough to fatten a bullock, which, if put up in tolerable condition in the month of November, will be ready for the market in twelve or thirteen weeks.

Cabbage, combined with oat or wheat straw, with the addition of good hay, will speedily fatten oxen or bullocks, besides yielding a larger quantity of manure than almost any other article employed as winter food.

Parsnips, carrots, and Mangel-wurzel.—Parsnips are next in value to oil-cake; they must not be given in too large quantities, as they are apt to cloy the stomach; they should, therefore, be combined with other food, or if alone should not be continued for any lengthened period. Carrots rank next to parsnips, but mangel-wurzel has been found equal if not superior to carrots, and very little inferior to parsnips.

Potatoes, when cut and steamed, furnish an excellent supply of food, especially when combined with a comparatively small portion of other food, and in combination with turnips previously boiled, are considered more valuable in their application.

But whatever articles of food may be given, they ought to be apportioned with as much regard to *regularity of time and quantity* as is practicable; and if any small part be at any time left unconsumed, it should be removed before the next feed is given, otherwise the beast will loathe it.

Of equal, if not superior, importance with regularity in feeding, is *cleanliness*, a regard to which is admitted, by all intelligent breeders, to be one of the most essential requisites to the well-doing of cattle. Hence not only ought they to be supplied with an abundance of pure water, but also when they are brought into the stalls, either from pasture or from work, their feet ought to be washed, lest any filth by remaining there should soften there hoofs. Further: frequent washing after hard labor, or at least once in the week, should be performed; and, though the practice of currying and combing, or of friction

with brushes, cannot be at all times carried into effect, where the herds are numerous, yet, we conceive, they might often be rubbed with a wisp of straw to considerable advantage. The mangers and stalls should likewise be kept as clean as possible; and the former, if they cannot be washed often, should be cleared every morning from dust and filth, which may be easily effected by means of a common blunt-pointed bricklayer's trowel, otherwise they acquire a sour and offensive smell from the decay of vegetable matter left in them, which nauseates the cattle, and prevents their feeding. After the stalls have been cleansed by constantly removing the dung and sweeping the floor, a sufficient quantity of fresh litter ought to be strewed over, which will invite them to lie down; for nothing contributes more to expedite the fattening of cattle, than moderate warmth, ease, and repose. We do not conceive that this mode of winter management of stock is adapted to all parts of the western country, but there are undoubtedly situations, where a part, if not the whole of this system may be very advantageously brought into practice.

Colors of Plants.

The different colors of plants are probably owing to different degrees of oxygenation in their chromule, which is every where present in their cellular texture in the forms of minute globules. It is colorless in its primitive state; but as soon as the parts capable of becoming green are enabled to decompose carbonic acid by their exposure to light, the chromule assumes a green tint. In the autumn when oxygen continues to be absorbed, but ceases to be given out again by the leaves, the chromule assumes a yellow or red tint. As the small globules contained in the cellular tissue of the flower and other colored parts, appear to be of the same nature as those in the leaf, it is the most plausible conclusion to suppose, that all vegetable colors are modifications of this single substance. A very small portion of light seems to be all that is necessary for coloring the chromule of some plants. Humboldt, the famous traveller, observed a sea-weed, brought up by the lead from the depth of 180 feet, to be perfectly green, though the light diffused at the spot where it had grown must have been nearly fifteen hundred times less than at the surface of the sea. It is almost a general rule, that those species which possess varieties of a blue color, do not embrace varieties of a yellow color, and vice versa, though either class may possess others which are red and green. The following scale will represent what other varieties may, a priori, be expected in a given species, upon observing a variety which possesses one or other of the colors mentioned in the right or left-hand column:

	Green,
Greenish blue,	Greenish yellow,
Blue,	Yellow,
Violet-blue,	Orange-yellow,
Violet,	Orange,
Redish violet,	Orange-red,
	Red.

Taste and Scent of Plants.

Nothing is known of the causes which produce so great a variety in the taste and scent of different plants. The senses are bad criterions for enabling us to decide and classify these phenomena, as we may readily perceive when we find the odour of arsenic to be exactly like that of garlic, and the smell of musk to exist in several plants. It is observed that the vegetable substances which are the most tasteless are frequently those which afford the

most nutriment, and hence it is customary to improve their flavor by the addition of some condiment. This result is often obtained naturally in certain alimentary species, which are nearly allied to others of a dangerous quality, or is produced by blanching some poisonous plants themselves, when their bad qualities are disguised by the superabundant quantity of wholesome nutriment that is thus formed.

Preservation of Fruits.

Being well aware that there are a number of good housewives, who take much pride and pleasure in setting before their guests the best specimens of all kinds of refreshments, in the most tempting and delicious mode of preparation, we propose now to give some instructions to the ladies of our farming brethren, on the subject of the making preserves, pickles, &c. We know that all the good dames are in the habit of making some preserves, pickles, &c., but they will, we trust, pardon us, when we say that there are but few amongst them, whose preserves are perfectly *whole* and *clear* or *transparent*, qualities so desirable both for flavor and beauty; or where pickles have that crispness and relishing flavor so desirable in them. The following receipts have been obtained with some difficulty from a German, who has been in the habit, for a long time, of preparing an immense quantity of these articles in a large produce house, for steam boats and foreign use. The great object he has obtained in his mode, is the prevention of *fermentation* at any period after he has made them. This is a great point gained. Another feature in his plan is the using the white Havana powdered sugar, for it is impossible that the molasses which brown sugar of any quality contains, can be cleared from it so as to prevent its taste in the preserved fruit. For the best mode of preserving peaches, observe the following directions:

Dissolve in cold water as much white Havana sugar as it will hold in solution, place the raw syrup in a copper preserving pan on a fire, (best made of charcoal,) and let it boil slowly, being very particular to skim it carefully, and when it is boiled into a thick syrup, beat up the white of an egg into a froth, and add it, straining it well—then boil for an hour on a brisk fire, removing the scum which the egg will bring to the surface. When no more skimming is necessary, remove the pan from the fire and let your syrup cool. Then strain the syrup through a flannel. Then pour a sufficient quantity on your fruit, (which you have previously prepared by pulling and removing the stones,) and let it remain so for 24 hours, then boil for one hour, or if the fruit is green, for 1½ hours, when you must again allow it to cool, and then if necessary add more syrup.—To finish, place it on a slow fire and boil for one hour, carefully removing any foreign matter which may be thrown to the surface. By this process you will infallibly have your preserves whole and beautifully transparent, and of the most delicious flavor.

Cider Making.

The operation of cider making is as simple and certain of success, as brewing, making wine, &c.—so simple that when understood, every person possessing a hedge row of trees may make a good supply for his own use.

Let your apples become thoroughly ripe before they are taken from the

tree, or the cider will be rough and hard in spite of the operator. The most certain among the tests of ripeness is, the fragrance of their smell, and their spontaneous dropping from the tree.

When mature, on a dry day, the limbs may be slightly shaken and disburthened of their golden store. It may be well to distribute under the tree some bundles of straw covered with a large wagon cover, or any equivalent, unless you grind the fruit immediately.

It may be well to make these gatherings in proportion as the fruit ripens, the latter gathering, as well as the wind falls, can only make an inferior cider, the prime will be limited to the two former gatherings.

On the proper mixture, or rather separation, the merit of the cider will greatly depend. Each kind should be collected separately and kept until perfectly mellow; they may be spread out, if exposed to a free current of air and sun, and it is thought the rain will not hurt them. Spread in layers 10 to 12 inches deep. If dry, spread straw over them. They would do well upon an airy barn floor, but examine that no unpleasant smell be contracted which will be imparted to the cider. Prior to grinding, separate any decayed or green fruit that may appear.

There is some difference of opinion among ciderists, whether the pommace should be immediately pressed or suffered to stand twenty-four hours, or even two days, according to some, that it may acquire the redness of color, and also form an extract from the rind and kernels. If it be carried too soon to the press, perhaps it will lose something of the advantage expected from the kernels, and the liquor be of a lower color than may be wished.

Be assured if the pommace remain too long unpressed, the acetous fermentation will come on before the vinous is perfected, especially in the early part of the season. *Twelve* hours will bring the pulp into a fit state for any of the purposes desired. A longer period having elapsed, you will find a sensible heat generated within the mass, which will not fail to endanger premature fermentation; if this has happened, turn it that it may speedily cool, and proceed; avoid all acidity, fustiness, must, &c. in the press; use the straw, reed, or hair cloth; have these perfectly sweet or the cider will suffer a fatal impregnation from those principles. Let all the juice pass from the press through a coarse hair seive, and then through superior means of filtration to the open vat, or let it run from the press to the cask. Thus far the operation is a simple manual.

But here the great art commences; here nature institutes an action which converts the turbid unwholesome fluid into a cheering, salubrious, vinous beverage. There is an evident ebullition—the rising bubbles form a scum or soft spongy crust over the whole liquor; this crust is frequently raised and broken by the force of the air now disengaged from the liquor. This effect continues whilst the fermentation is brisk, and then gradually ceases. The liquor now appears tolerably clear to the eye, and has a piquant vinous sharpness on the tongue. If in this state the least hissing noise be heard in the fermenting liquor, the room, by said sign, is too warm; let in the air at door and windows.

Now is the critical moment. If you would have this strong and generous liquor *pleasant*, all further sensible fermentation must be stopped. This must be done by racking off the pure part into *open* vessels placed in a cool situation, after which it may be again barrelled for the winter, and kept moderately cool. The Herefordshire cider makers, after the cider has perfected its vinous fermentation, winter their casks in open sheds, and when the spring advances give the last racking and then cellar it.

In racking it is important that the stream be small, and very important that the receiving tub be but a small distance below the cock, lest by exciting a violent motion in the parts of the liquor another fermentation be brought

on. The feculence of the cider may be filtered through a bag and placed among the second rate ciders, but by no means returned to the prime.

In this situation the cider will not only drop the remainder of its gross lees by a sort of insensible fermentation, but will become transparent and highly vinous and fragrant. According to Knight, (a famed raiser of fine fruit in England,) after the fermentation has ceased and the liquor has become clear and bright, draw it instantly, or the lees, possessing the same properties as yeast, will inevitably bring on a second fermentation, and will thus mingle again with the cider fatally.

The best criterion by which to judge of the proper moment to rack off, will be the brightness of the liquor: the discharge also of fixed air which attends the fermentation, has entirely ceased, a thick crust of reduced pulp being collected on the surface. If the cider now racked off remain bright and quiet, nothing more is to be done until spring; but if a scum collects again on the surface, you must not delay to rack it off again into another cask. In fact, so long as a hissing noise is heard, or any sign of fermentation reappears, it will be necessary to continue to rack off.

The strength of cider is much reduced by frequent racking. The juice of fruits which make strong cider is often muddy all winter, and demands much attention to prevent excess of fermentation.

The casks into which the racked cider is to be put, should always have been thoroughly scalded and dried again, and each should want several gallons of being full, to expose a larger surface to the air.

Knight continues to say, that if the above precautions be neglected, you will convert a fine vinous liquor into vinegar inevitably, and can never restore its richness and purity.

When acetous fermentation has come on, you may attempt to prevent the full extent of the ill effect by adding from a bottle to a gallon of good brandy, or any good spirit. A pail full of old cider may have a good effect. But all these will fail in a close warm cellar. Let the air be changed to that which is cooler, as soon as possible, and for a considerable length of time. Some cider merchants attempt to cover this accident by the use of lead and thus prepare for their unsuspecting customers a poisonous draught.

Stumming, which is the fuming with burning sulphur, is sometimes advantageous. A strip of linen two inches by twelve, immersed in melted brimstone, is burnt within a cask containing a few gallons of cider, when the cask must be rolled to incorporate the fumes. The effect will be to prevent any slight improper fermentation. To add flavor, powdered ginger, cloves, or cinnamon.

Cider is generally in the best state for the bottle at two years old, when it will soon become brisk and sparkling, and if rich and well worked will keep twenty years, or ad infinitum.

The usual process of cider making by the farmer is very simple. Setting aside the foregoing rules, his object is quantity, and to avoid expense, the apples are usually ground as soon as they become moderately ripe, the juice is racked at once, as soon as it becomes bright, or more frequently conveyed directly from the press to the cellar. A violent fermentation soon begins, and continues until nearly all the saccharine part is decomposed; the casks are filled and stopped the succeeding spring, and no further attention is required. The liquor thus prepared will keep in the cask from three to six years, according to its strength. It is generally harsh and rough, but rarely acetous, and in this state is usually preferred by the farmers, and labourers, and many others.

From an orchard of fruit in full bearing, in seasons ordinarily favorable, each tree may be expected to average half a hogshead of cider.

Weeds.

If our young friend, "Weed Puller," will come down doggedly to the task

of pulling weeds and reading the "Cabinet," we have no doubt he will soon acquire the knowledge of which he is in pursuit; he has chosen the better part which cannot be taken away, and in due time he will reap the fruit of his labor if he faint not.

In the mean while, we would take leave to recommend to him the mode practiced in England, a mode as applicable in this as in any other country, and of importance in proportion to the quantity of weeds to be eradicated—far greater here than in any country which we have before seen, the soil and climate conspiring together to perfect a growth of three or four years in the space of one. It is this: when no crop is on the land, *to plough for weeds*, and to do all in his power to exhaust the land of them before sowing his crops, not leaving this indispensable labor to be performed after the crops are grown, when they will often be found to interfere with the free use of the plough. To this end let him determine, religiously, to turn up every acre of land so soon as the crop is removed, especially immediately after harvest, turning the soil to a depth rather greater than the surface staple; laying it well up and over, by means of very narrow furrows, so that the sod or weeds, as may be, might be brought into close contact with the bottom of the furrow, and so fermentation might be engendered and decomposition be brought about, the beneficial effects of which will be very apparent in the spring course of crops; which will be found more easy of cultivation in consequence of such autumnal ploughing. The only cure for the train of "nuisances" which he enumerates, is deep and effectual cultivation: there is no royal road to agriculture, any more than geometry, but the common road is plain and very agreeable to travel; it is only to pursue it to the end, and no one ever yet was beaten in a race against the weeds, if they are attacked in the right way. Some are to be overcome by the grubbing axe only, but in general the plough and the hoe are sufficient, if they are put into requisition early.—*Farmer's Cabinet.*

Sunflower Seed—Inquiry.

A friend in Niagara county asks for information respecting the value and use of sunflower seed, for making oil, or for other purposes. Also, the best manner of cultivating, and the amount of produce per acre.

The following article, from the Madisonian, is the latest information we have seen on this subject:—

THE HELIANTHUS, OR SUNFLOWER PLANT.

We presume it is not generally known that this plant, which is so often regarded as worse than a useless cumberer of the ground, is cultivated extensively in some parts of the United States. and turned to a very valuable account in a variety of ways. We have before us a letter from a firm in the interior of Pennsylvania, which gives us some interesting facts, which we think worthy of publicity.

The oil derived from the sunflower seed is pretty well known. Its excellence for fancy painting and druggist use, is said to be confirmed, and we are even told that it is equal, if not superior, to almond, or olive oil, for table use. One acre of ground will produce from forty to fifty bushels of seed, sometimes much more. Good seed will produce a gallon of oil to the bushel, and the oil has been sold at one dollar and fifty cents per gallon, when flaxseed oil stood at ninety cents.

The refuse, after the oil is expressed, is said to be valuable food for cattle.

The leaf is manufactured into segars, of a mild and pleasant flavor, possessing, it is said, powerful pectoral properties, highly commended by physicians in many diseases of the chest. The leaves, properly cured, will bring from five to fifteen cents per pound.

The stalks, when stripped of the leaf and seed, may be burnt, and a superior alkali made from the ashes.

The comb of the seed, or properly the filaments of the flower, is excellent food for cattle or hogs.

The Helianthus is cultivated in the vicinity of York, Pa., and a gentleman in North Carolina, in 1839, cultivated one hundred acres.

Seed Wheat.

The following paragraph from the Dumfries Courier, on the subject of the quantity of wheat to be sowed per acre has some good reasons in it, although we think one bushel per acre a little too small in general, particularly on poor lands. We give it, however, that our agricultural readers may judge for themselves: we think it somewhat applicable to America as well as Britain:—

"In Scotland they sow some three and a half and some four bushels to the acre; and in England two and a half bushels to the acre; whereas one bushel. properly put in, is quite enough, provided your land has been made healthy by draining in the first place. We will suppose you sow three bushels to the acre; it comes up and looks beautiful, like a fine meadow in the end of April. The farmer smiles, and says, what a fine plant I have got! Well, so it is; but as it covers the land so completely at first coming up, how, I would ask, is the corn to come to perfection, unless a great quantity of it is destroyed in some way or other? No man in his right senses, I suppose, will say that a corn of wheat should be pinched into such a course that it can only send up one straw; and consequently but one ear, whereas it ought to produce forty; and more than this I have seen myself, on poor land, when it had room to expand and tiller out: and the sample, when it comes to hand, will be much finer, and consequently will produce more flour, which is sought by every wise farmer. But when sown thick, especially upon good rich soil, the straw is drawn up to a great height; and then, when strong winds and heavy rains descend, like the house built upon the sand, it falls; the corn does not come to perfection, the farmer complains, and all is bad together: whereas, if the corn had been sown upon good healthy land, each root would have tillered out into from twenty to fifty straws, each of which would have strength enough to stand the gusts of wind and showers of rain, and would yield fine plump samples, instead of a poor, meagre, blighted crop. As I speak from actual experience, I care not who may treat with ridicule."

From the Franklin Farmer.

Agricultural Implements.

BOURBON CO., near Centreville,
July 2, 1840.

DEAR SIR:—Your remarks in the Farmer, (a few numbers back,) on the hay rake, induce me to communicate to you some thoughts on it, as well as on one or two other agricultural labor saving implements.

The *revolving hay rake*—I am informed by a gentleman who has one in use, and who is a practical farmer—is an excellent implement, and I doubt not it may justly be counted one of the best labor saving machines used in agriculture. The amount of manual labor to be saved by it I do not know, but it must be considerable, as it is greatly to be preferred on that account to the common hay rake, which I have found by actual experiment to be a saving of the labor of four hands. At my last hay harvest I made one myself, and was occupied three hours in doing it. I took a piece of scantling 9 feet long, $3\frac{1}{2}$ inches square, and inserted ten teeth 3 feet long, at equal distances; having sharpened the teeth roundly at the point. I then laid it flat down, the teeth lengthwise on the ground, and inserted, $1\frac{1}{2}$ feet on each side of the centre of the scantling, a shaft 3 feet long at an obtuse angle of about 55 degrees to the teeth, and connected the tops of those shafts with a round cross piece. I then put in one upright 3 feet long at each end of the scantling and one foot from the end, and near the point where these uprights stand, I

bored two one inch holes between the teeth and parallel with them, and the whole rake was finished. The two one inch holes were made to pass a rope through to be used as traces, and the two shafts connected at the top, formed a handle for the laborer to hold by. When the rake moves, the teeth of course slip under the hay, and so it is gathered into winrow. If any one will try this machine, he will never again have his hay put into winrow with the pitchfork, because he can make it himself, and will find that one horse and one man can with it put hay into winrow as fast as four men can put it into cock, and because the hay is taken up with more neatness than it can be with the fork.

While passing through a part of Ohio, a month since, I saw a plough in a corn field, though I did not see it at work, which I am sure must be a considerable improvement in the way of saving labor. It was designed to lay off rows to plant corn by, and was simply two shovels connected together with a cross piece, say four feet apart, to be worked by one span of horses at a tongue, let into the cross piece, and managed by one ploughman. I was in a stage, and got but a slight view of it, but I thought I saw enough to know that it would do, and in this I was confirmed upon inquiry at the watering place close by, where I was told it did well, and was invented and made by the gentleman on whose farm I saw it, and who I have no doubt is a *book farmer*, because he goes in for (at least) an improvement in agricultural implements, and because I was told he had been farming but five years, and had been formerly a sea captain, and his farm looked very well so far as I saw it.

The *hemp cradle* is another implement of which I have a very favorable opinion. I have used it in my hemp crop for two years, and know it is a great saving of labor. Hemp can be cut with it as close to the ground as it can be with the hoof, if care is taken in its use, and a man can, with perfect ease, cut one acre per day throughout the season, and lie in the shade at noon from 12 till 2 o'clock. With a hook, either the drag or round, he cannot possibly one day with another get over more than one half acre. Hemp of any height under eight feet can be cut with the cradle; when so tall as eight feet, as much as an acre cannot be cut by the day, since the cradler has to receive the hemp with his left hand, and in that way bunch it, which need not be done when it is shorter, for he can then with great facility throw it into suitable bunches for drying and binding. This cradle is made by Wilson Larrimore at Millersburg.

I had intended to say something about the construction and use of the roller, but will defer doing so till some future period; in the meantime, can you not urge your neighbors and friends, practical farmers of observation, experience and intelligence, to communicate the light they have through the columns of the farmer to its readers? If you could, blanks occupied by long descriptions of sheep farms in Scotland, of interest to but few persons here, would be filled with matter profitable to Kentucky farmers, and the paper would continue to be worthy the patronage of the agricultural community.

Respectfully, &c.

GEO. W. WILLIAMS.

Autumn Work.

There is no part of the year in which the farmer should be idle. After the corn is laid by, and before fodder gathering, turnip grounds should be prepared and the seeds sown.

Improvements about a farm might be endless, and yet all of them important. Fences should be righted, and new ones made when needed; and the corners of all well cleaned out. It is now the most favorable season for unroofing houses, and putting on new ones. Stables, barns, sheds, and corn houses, should be put in order, and new ones reared when needed. He who neglects having houses and shelters for his

horses, cattle, sheep, and even hogs, for the winter, may expect to sustain loss from *poverty* and disease, through the winter and spring. It is an established point that stock will keep fat on much less food housed, than if left exposed to the winter snows. Indeed I should have said, it is impossible to keep them in fine health and condition without protection from the hard weather. Much less food too is required, when animals are regularly fed, watered and attended.

Saving grain.—This is the proper season for hauling up the wheat and rye crops, thrashing and cleaning the grain, putting away for use, and packing away the straw for the winter.

It is a matter of no small moment to let the grain have sun, till it is perfectly dry. This is the surest means of preserving it from weevils and hurtful vermin. Without this precaution, it is hardly probable any course can be adopted to save it from a musty and unwholesome smell, and consequently from considerable injury. If farmers have not provided themselves with thrashers, they are compelled to use the flail, or tramp the grain with horses, either of which is a bad system, and should be abandoned as soon as convenient. A well constructed machine for thrashing out grain, will be worth more to the farmer per day, than ten hands, and its work is generally done better. Preparations should be made in this month for sowing rye, and several varieties of grass.

Rye, as we have said before, is one of the best restorers of soil, and most profitable for winter and spring pasture, with which we are acquainted. Let the land be broken up as soon as possible, if it is not in some other crop, and permit it to lie for a few weeks to rid it of weeds, and at any suitable time from the middle of August to the last of September, let it be sowed and ploughed again, and well harrowed and rolled if the ground is cloddy and uneven. The quantity of grain allowed to the acre, varies in proportion to the strength of soil, and the purposes intended by the crop. If the land is thin, and there is no intention of pasturing the rye, one bushel, at most, will be a plenty; but if the land is strong, and pasture is the object, a bushel and a half will be little enough to the acre. Rye may be sown among the growing corn, and lightly ploughed in, with the expectation of making a pretty good crop; but if the corn is anyways forward, it would be better to gather it early and plough and harrow the ground when it is sown.

Timothy, might be sown the last of August, or any time in September, and if the season proves favorable, a good mowing may be anticipated the first year. Any ground, new or old, for Timothy, should be thoroughly broken and pulverized before the seeds are sown. If the ground is left in a situation that weeds can grow, the grass will be choked, and the stand very irregular; but when the ploughing and harrowing are properly attended to, and the ground rolled after sowing, the set may be expected to be regular and the growth vigorous. Timothy will make a good crop when alone, but it is more safe, and always a greater yield may be expected, when Timothy, Herds grass, and Clover are sown together. Many excellent farmers put Blue grass with the Timothy, and the English recommend the sowing of at least three or four varieties of seed, to get a full crop. Autumn and spring are the times for sowing all kinds of grass.

Butter.

The following remarks upon the manufacture and preservation of Butter, were written by the conductor some three or four years ago. With some slight alterations, they are now submitted to our readers, as containing the most essential rules to be observed in the management of this important household art:

Butter is one of the staple productions of our state; and every hint that serves to improve its quality, or increase its quantity, must be useful.

There are various methods of making butter, as from new milk, lobbered milk and cream; and there is certainly a great diversity in its quality. The cause of this difference may partially be owing to the season, the feed and the breed of cows, but most is owing to management. Our dairy women are very much like their good husbands, apt to be somewhat conceited, too wise to learn, and generally believe their own mode the best, and never suspecting that philosophy or science can have any sort of connection with this humble branch of household labor. All seem to be agreed, however, upon the following points:

1. That cleanliness is the first requisite, for many and very obvious reasons.

2. That every sort of liquid should be separated from the butter—because if such is suffered to remain, it soon becomes rancid, and taints the mass.

3. That the salt used to preserve it should be pure, because bad salt will not keep it sweet—rock salt, and that produced by solar evaporation, being deemed best.

4. That no more salt be used than is necessary to render the butter palatable; all excess being injurious to the taste, and an imposition upon the buyer.

5. That the vessel in which it is packed should be incapable of imparting to it any bad flavor—wood abounding in pyrolignic acid, and red earthen being improper—the first giving a bad taste, and the latter, by reason of the glazing, which contains lead, being in a measure poisonous.

6. That when packed, the external air should be wholly excluded from the butter—because the air soon induces rancidity.

Our dairy women have added two other rules, which they deem all important to the *preservation* of *good* butter, but which I am induced to think are but little known and less practised, viz:

7. That no water be suffered to come in contact with the butter in any stage of the process—because it tends to lessen the essential volatile matter which gives to butter its rich peculiar flavor.

8. To have the salt incorporated with the butter is the first operation of working, and after an interval of twenty-four hours, to apply again the butter ladle until the whole of the liquid is expelled. By this operation the salt is dissolved and effectually blended with the butter, which is free more effectually from buttermilk.

9 When the cream is employed, it should be somewhat sour, though not stale, as in this state the butter more readily separates from the serous or cheesy matter.

10. That the temperature of the cream, when submitted to the churning process, should not be below 52, nor above 62 degrees—a lower temperature rendering the separation difficnlt, and a higher one essentially impairing the quality of the butter. A thermometer with a sliding guage, adapted to this and other household purposes, will cost two dollars, or two dollars and fifty cents. The temperature may be regulated without bringing water in contact with cream, by setting the churn in a tub of water, either hot or cold, as may be required to change the temperature of cream.

The Hollow Horn.—A Fair Offer.

Within a few days we have heard several farmers from the surrounding country complain that their cattle have the hollow horn. We have had a little experience in the management of cattle, and know something about this "hollow horn," and are satisfied that it is nothing more or less than an attendant, a sort of hanger-on, of that worst of all diseases among cattle, the *hollow belly*. We know men who have cattle that during the whole winter have been exposed to the "pitiless peltings" of the storms, with a snowdrift or an icecake for a bed, with nothing but a scanty pittance of prairie hay or musty straw for food, and who now wonder that their cattle have hollow horn! The wonder should be that they have cattle living.

We will make the following proposals to all those owning cattle. Keep them under shelter during the storms and cold weather of next winter. A hovel, built of logs and covered with coarse hay or straw, standing in a dry place, is sufficient for this. Salt them twice a week regularly; give them a sufficiency of wholesome provender, and at all times, and each of them a mess of potatoes or turnips at least two or three times a week. Keep your working cattle shod, and if you work them hard, feed them accordingly. Do not beat them; never let them stand in the cold longer than is absolutely necessary; particularly when you drive them to town with a load of grain or wood or for any other purpose; do not let them stand in the street hungry and shivering, hour after hour, while you are in a grocery drinking and carousing. Follow these directions fairly, according to their true intent and meaning, and in the spring we will engage to pay for all the damage you have sustained by the "hollow horn."—*Fort Wayne Sentinel.*

Manuring.

The bulk of manure on a farm should ever be bestowed upon those crops designed for the support of live stock, by which measure, and the use of the hoe or cultivator, these *fallows*, as they are very properly termed, will be in a most rich, clean and elegant order for the production of corn or grain of any kind; and this measure is absolutely essential upon the soils apt to run riot from superabundant fertility, when fresh dunged and sown with grain broadcast, when the consequence too often is one continued bed of weeds and a forest of straw, borne down by its own weight, and destroyed by the rust. The true management of dung in the farm-yard, is to get it ready for use, that is, to expedite a due fermentation as early as possible, by throwing it into convenient situations in heaps of advantageous size. Dung-hills of moderate size are most favorable to fermentation, and are, besides, ready at hand for choice on any emergency; and it is very much better to continue, at every opportunity, to make dung-hills in proper situations, either at home or in the fields, than to suffer the dung *to lie all the season in the yard, trodden down hard by the cattle and exposed to a winter-flood of rain.* Every dung-heap should rest on a foundation of mould, so placed as to catch the draining of the manure, which would else soak into the earth and be lost, but which, fully impregnating the bottom layer of mould, renders it nearly equal in richness with the rest: and the dung ought to lie loose, that there may be space for the act of fermentation. It would doubtless be advantageous to have the dung under cover, but such convenience is rather out of the question on account of the expense, nevertheless a covering of earth is no despicable substitute. Various receipts are given for the making of compost—some of them laughable enough, on account of the expensiveness, scarcity, or hard names of the ingredients; but the best way is for the farmer to get all the various articles of manure he can possibly lay his hands on, the fatter the better, and with them form his compost heap; the different ingredients should lie as equally as possible, nor ought lime or ashes to come in immediate contact with dung, but with earth or vegetables: and every practical man knows when to turn it over and divide and break the clods and adhesions.

Lawrance.

School Books on Farming.

If a good elementary work on the theory of husbandry were introduced into our common schools, it would set thousands of ingenious boys to thinking. Farmers are familiar with many operations of farming, but they only stand on the threshhold of the temple of knowledge. They see effects, but they know but little of the causes of things. It is the duty of government to remove the film from their eyes.

A strong recommendation for Gardening.

"South Field Farm, near Parson's Green, has been in possession of the family of Rench upwards of two centuries, and during the whole of that time occupied as a nursery and garden-ground. The father of the late Mr. Rench, produced in this garden the first Pine strawberry, and Chinese strawberry, and also the first Auricula ever blown in England. He also instituted the first annual exhibition of flowers. He died at the age of *ninety-nine* years, having had a family of *thirty three children.* The late Mr. Rench, son of the above gentleman, reared in these grounds the largest Arbutus trees ever grown in England, and was the first who introduced the Moss Rose into that country. He was thrice married, had a family of *thirty-five children*, and was able to *walk sixteen miles in one day*, after having attained the age of a *hundred years.* He died in the year 1783, in the same room of the same house in which he was born.—*Faulkner's History and Topographical account of Fulham.*

From the Gardeners' Gazette.

The Turnip Beetle.

(*Haltica memorum.*)

This beetle, which is generally but objectionably called the turnip *fly*, injures the turnip crop to an enormous extent, while the plants are in the seed leaf. The first crop is sometimes so completely destroyed, that the farmer finds it necessary to re-sow his fields; but then, he may have no better success. Arthur Young says that in 1786, the turnip growers in Devonshire sustained a loss of full one hundred thousand pounds, owing to the ravages of this insect. Gilbert White observes, in very hot summers they abound to such an amazing degree, that as you walk in a field or a garden, they make a pattering like rain, by jumping on the leaves of the turnips or cabbages. It also proves destructive to brocoli, and to all other kinds of cabbage, to mangel-wurzel, beet, and seeding clover. Mr. Henry Le Keux, who has devoted much time and patience to the study of this insect, gives the following description of its appearance and general habits:—

"This insect is a small beetle of a black color, with a longitudinal stripe of light brown on each of the wing cases, and it is furnished with six legs, the hinder pair of which are powerful springers, like those of the flea, by means of which it is enabled to leap a distance of from twelve to eighteen inches without the aid of its wings, which latter I have not observed it to use except in warm sunshine, or when the thermometer stood above seventy degrees in the shade. One day, in May, 1836, when the thermometer stood at 74 degrees in the shade, during a light south wind, great numbers of them were on the wing, which, from their minute size, I should not perhaps have observed, but for the circumstance of their striking against me and falling, before they could recover their wings, upon a piece of white paper which was before me at the time, and I counted upwards of twenty in less than half an hour. They were all proceeding southward. When many of them were confined together, an odour like that of the lady beetle is perceptible, and is very strong from one that is crushed. They pair towards the end of May, if the weather is warm, and continue to do so during the months of June, July, and August. They live through the winter secreted in the crevices of old timber, the rough bark of trees, and particularly in dry loose banks. They occasionally leave their hiding places in winter when an unusually warm day occurs. At such times I met with them in the months of January, February, and March, on a barkless and decaying stump of a tree, on the side of a dry bank, and on clods of earth, when they were as active as in the summer, but only when the sun has been shining, and in a situation sheltered from the wind. But those which I have discovered in their haunts in cold weather were torpid or inactive: indeed, I

thought them dead, until the warmth of my hand, in which I was conveying a number of them home, revived them, and in a few minntes they had all skipped away. From the fact of their being found in such various situations, I think that there can be little doubt that they breed in many other plants beside turnips, probably in any of the cruciform kind. Charlock, or chorleigh, a weed which grows in the hedges, and is generally annoyingly abundant in tulip fields, affords these insects a welcome feast towards the end of April, and during May, when I have found plants of this kind covered with them, and every leaf pierced full of holes; but these are presently deserted when any turnips appear in the neighborhood."—*Entomological Society's Transactions*, ii. 28.

Numerous receipts have been published for destroying these insects, or for rendering the crop exempt from them at the very first. Some of these receipts are so palpably nonsensical, that I shall pass them by in silence, and only draw attention to such as appear founded upon a knowledge of the habits of the insect.

"Several preparations of the seeds, previously to sowing them, have by turns been recommended, such as steeping them in sulphur-water, or sprinkling them with soot at the time of sowing; these, however, have not been found efficacious, and even when they have apparently been successful, perhaps it has been under circumstances in which the plants would have equally escaped without any precautionary measure. No insect can very well deposit its eggs in the seed of the turnip before it is in the ground, at least there is no known species which perforates the pods for that purpose. The sulphur, or soot, or any other application, is, of course, thrown off with the tunic or outer coat, and does not in any way protect the cortyledon, or side lobes of the seed, which come up in the form of leaves, and in which the eggs of the beetle are then deposited. By some cultivators these leaves are powdered with *quick lime* as soon as they show themselves above ground; a plan which appears the most rational for preventing the mischief. One of the easiest remedies against it, however, is recommended by Neill, to *sow thick*, and thus insure a sufficiency of plants for both the beetle and the crop. As soon as the rough leaves are a little developed, the danger from the insect depredator ceases."—*Vegetable Substances used for the food of Man*, p. 234.

In some parts of Sussex the farmers sprinkle a *decoction of elder leaves* over their turnip crops to destroy the grubs, and it is said to have that effect. Last year a correspondent of the *Sussex Express* stated that he had found an effectual remedy by spreading, over the newly sown seed, a top dressing of *gas ashes*, the odour from which kept them away. Another writer recommends that the day before the turnips are expected to spring up, or as soon as they are seen to be emerging, the whole field be immediately sown with a mixture composed of one bushel of *sulphur*, one of *sulphuret of lime*, and six of dry *sand*. This quantity will suffice for two acres. But the Rev. F. W. Hope, a well-known entomologist, conceives that sulphur would not be serviceable, for he has noticed that insects swarmed abundantly on places covered with pyrites. Mr. John Phillips, of Heston House, Herts, recommends that *wood ashes* be sown on the plants early in the morning, when there is a sufficient dew upon them to make them stick; and he adds, that he who tries the experiment may rest assured that not one leaf will be destroyed, unless there fall a very heavy rain to wash it off the plants. A Shropshire farmer says, that he has found, from long experience, that the most efficacious remedy is to sprinkle the crop, as soon as the seed leaf appears, with a mixture composed of one bushel of *soot* and two of *quick lime*. A writer in the *Dumfries Times* says, that a gallon of unrefined *hartshorn*, mixed with two bushels of mould or ashes, and then sown broad-cast over one acre of turnip

land after the seed is sown, will protect the plant from the insects. The *Bucks Gazette* states, that in Wilmerton parish, a large field of Swedes, which were nearly destroyed by these insects, was saved by driving a flock of sheep over them, first up and down, and then across, which killed the insect, and appeared to destroy the crop; but after the first shower of rain, however, the turnips appeared in great abundance, and proved to be the best crop of Swedes in the neighborhood. In the *Annual Register* for 1786, the Rev. Mr. Hill, of East Malling, near Maidstone, in Kent, says that some good is done sometimes by running a light roller over the young plants, with a bundle of blackthorn fastened behind it.

A correspondent has recommended that when these insects appear on the cabbage tribe, the plants and soil should be dusted over, while moist with dew, with powdered lime, partially air-slacked, but quite dry, mixed with about one-third of sea-coal soot; and he remarks, that soot contains an ammoniacal neutral salt, and this salt, when the soot is mixed with quick lime, is decomposed by the affinity which the lime possesses for the acid of the salt, and the ammonia being deprived of that, is set at liberty in the form of a pungent gas, which, he imagines, becomes the active and immediate agent in either destroying or disgusting the beetles within its influence.

J. H. F.

From the Cultivator.

Peach Trees.

Some two years past I came in possession of a number of peach trees that had been good bearers, and arrived at the age of twenty years. In the course of each winter previous, a layer of straw or chip dung was strewed around each tree, upon a body of snow or while the ground was frozen. The object was to retain the frost as long as possible, to prevent the flow of sap; a slight freeze after the buds begin to swell will kill the twigs, and frequently the tree.

From the Farmers' Cabinet.

Treatment of Sick Animals.

There are so many erroneous notions prevalent in the community, respecting injured or diseased domestic animals, and such unnatural and injurious practices as a consequence of these incorrect views, that no apology is necessary for an attempt to subserve the cause and interests of these useful creatures, who, if they had tongues to speak, would tell sad tales of the wrongs to which they have been, and still are, too often subjected.

We do not propose to give an essay on the particular cases that require attention—our object is rather, very briefly, to ask the owners of domestic animals to be guided by a few correct principles, which are applicable to nearly all cases, and which will at least prevent our doing harm, where we are not able to effect much good.

In the first place, then, we would insist, that when an animal is well he never requires any medicine—and when he is sick, we would protest against his being dosed with articles that are said to be "good" for the particular disease, without any reference to its violence or the symptoms, as common sense would dictate; that remedies the most opposite in their character and effects, may be equally advantageous in different periods of a case.

Always distrust the man and the remedy, when your friend declares that an article is always "*good*" or a "*certain cure*" for a disease, without reference to its symptoms—prescribing for the name of the disease, rather than the disease itself—this is the very essence of quackery in man or beast.

A large proportion of the diseases of animals closely resemble those of the human family, and require a treatment conducted on the same general principles—with some variations and some peculiarities, it is true, but none of those outrageous departures from common sense, which are too frequently witnessed.

A horse with pleurisy, or inflamma-

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We do not propose to give an essay on the particular cases that require attention—our object is rather, very briefly, to ask the owners of domestic animals to be guided by a few correct principles, which are applicable to nearly all cases, and which will at least prevent our doing harm, where we are not able to effect much good.

In the first place, then, we would insist, that when an animal is well he never requires any medicine—and when he is sick, we would protest against his being dosed with articles that are said to be "good" for the particular disease, without any reference to its violence or the symptoms, as common sense would dictate; that remedies the most opposite in their character and effects, may be equally advantageous in different periods of a case.

Always distrust the man and the remedy, when your friend declares that an article is always "*good*" or a "*certain cure*" for a disease, without reference to its symptoms—prescribing for the name of the disease, rather than the disease itself—this is the very essence of quackery in man or beast.

A large proportion of the diseases of animals closely resemble those of the human family, and require a treatment conducted on the same general principles—with some variations and some peculiarities, it is true, but none of those outrageous departures from common sense, which are too frequently witnessed.

A horse with pleurisy, or inflamma-

tion of the lungs, or apoplexy, requires a widely different treatment from one with cholic or with worms. There is no more mystery about the disease of a horse or an ox than about those of a man, and a violation of natural laws is as productive of pain and injury in one as the other.

There is too great a propensity everywhere, to resort to active treatment in all cases—a feeling that is encouraged by the ignorant or designing for selfish purposes. An adviser in sickness is often most useful, and shows most skill where he only tells what is to be avoided, and waits for indications for more active measures—doing little more than preventing ignorant but well-meaning persons from interfering with the salutary changes that may be going on.

Remember, that there is a restorative power in nature, to which it is always better to trust, than to direct active remedies without knowing for what particular purpose they are given.

There is never occasion for the administration of the disgusting combinations which the poor animal is made to swallow, for the mere whim of an ignorant horse or cow doctor. Many a fine beast has been lost by his owner trusting to such prescriptions.

When your animal has fever, nature would dictate that all stimulating articles of diet or medicine should be avoided. Bleeding may be necessary to reduce the force of the circulation—purging, to remove irritating substances from the bowels—moist, light, and easily digested food, that his weakened digestion may not be oppressed—cool drinks, to allay thirst, and, to some extent, compensate for diminished secretions—rest and quiet, to prevent undue excitement in his system, and so on through the whole catalogue of diseases, but nothing to be done without reason. Carry out this principle and you will probably do much good—hardly great harm—go on any other, and your measures are more likely to be productive of injury than benefit. But as we have before said, our object now is not to speak of diseases in detail—it is rather to encourage our agricultural friends to *think* before they *act*; to have reason that they will bear examination for every step in the management of a sick or injured animal; to remember that they have a powerful assistant in *nature*, (if she is fairly used,) and that specifics, as they are called, are much fewer and less to be trusted than their proprietors would have us believe. We might, indeed almost sum up what we would desire in one general direction of five words:—*Treat your brutes like men.* T.

Peach Tree Grubs.

Remove the earth from the roots of your peach trees, and just beneath the surface of the ground, you will probably find places where the gum has exuded from the tree. On scraping this away with a knife, you will find a small grub, which is the insect so destructive to peach trees, Cultivators of the peach have resorted to many methods to exterminate this insect from their trees, generally without success.

The habits of the insect should first be known, then perhaps some method may be devised for an effectual extermination. I have now before me some of these grubs, which I have just taken from some trees where a small quantity of charcoal was placed about the roots last spring. They are white, with a reddish brown head, and measure from half to three quarters of an inch in length.

The grub commences its operations the last of September and beginning of October. It appears to pass through the bark just below the surface of the ground and works a passage downwards into the roots where it remains during the winter. In the spring its course is upwards, and about the middle of May it may be found very near the surface of the earth. The pupa state commences about the first of July.

It appears in the winged state from about the middle of July to the middle of August; then deposites its eggs somewhere upon the outside of the tree, and not beneath the bark.

The young grub, which is hatched about the last of September, passes down and pierces the tree just below the surface of the ground, where the bark is tender, and proceeds as above.

If the earth be removed from the roots in the spring, all the grubs taken out, the loose dead bark cut away, the wound washed with soap suds, a box be made and placed around the roots in such a manner as to run a little below and rise three or four inches above the surface of the ground, and leaving a space of about six inches all around from the trunk of the tree, and if this be filled up with powdered charcoal, I think the tree will be safe from the ravages of this insect, for it will not pass the charcoal to get at the roots, and it cannot, while young, pierce the hard bark above.

Wash the trees thoroughly two or three times from July to October with strong soap suds. This will destroy all the eggs and young grubs.

Placing a shovelfull of charcoal at the roots of the tree and leaving it so that the grubs can pass down without coming in contact with it, will do but little good. Neither will any outward application do much *while the grub is under the bark.*

All outward applications, in order to be effectual, must be made while the insect is on the outside of the tree.

There are some insects which deposite their eggs upon the trunk and branches of trees in the fall, where they remain until spring, when they hatch. Therefore it is well to give all trees a thorough washing in the spring with soap suds. This will clear off all eggs and insects which may be upon them. It also clears off all the old rough bark, and gives them a clear and healthy appearance.—*Detroit Daily Adv.*

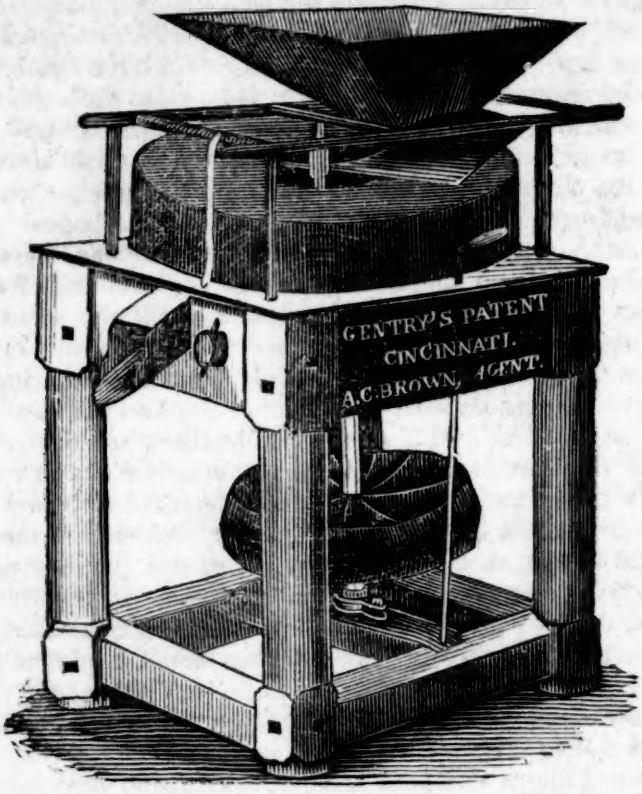
Agricultural Papers.

Nothing has contributed so much to the improvement of agriculture in our country as this class of publications. No farmer is so poor that he can afford to do without one. They serve as the vehicle by which a vast amount of information is disseminated, and the experience of a large number of practical men is brought into active operation. To be a "Book-farmer" is not now, as formerly, a term of reproach, and few farmers of intelligence in the country are now ashamed of the title. These publications have induced a spirit of inquiry, and if all men engaged in agriculture cannot become experimental farmers, still they may profit largely from the experiments of those who can. Another good arising from them, has been to induce men no longer blindly to follow a beaten track because their fathers did so before them, but inquire for themselves the reason why certain causes produce certain effects, and to endeavor to learn from them some modes of application. The great and paramount importance of the agricultural interest is now fully demonstrating itself, and he should be regarded as a benefactor to his country, who shall conduce in any degree to the improvement of that interest.—*North American.*

Rats in Grain.

Mr. Bavid, of Pollockshaus, has proved by experiments more than once repeated, that a sprinkling of garlic strewed amongst any kind of grain, while the sheaves are being built into stack, protects them against the inroads of rats and all other vermin. So late as last week, when he took in the last of his stack, it became obvious to all on-lookers that not a single particle of grain had been lost, and though terriers were in attendance, they had nothing to hunt. Rats, when they get into stacks, are exceedingly destructive; and it is consoling to know that an *in terrorem* remedy has been provided, alike simple and cheap.—*Dumfries Courier.*

People have heard of the saying of the "cart being before the horse;" just so is the situation of agriculture in this country, every thing else takes precedence of that all important interest.



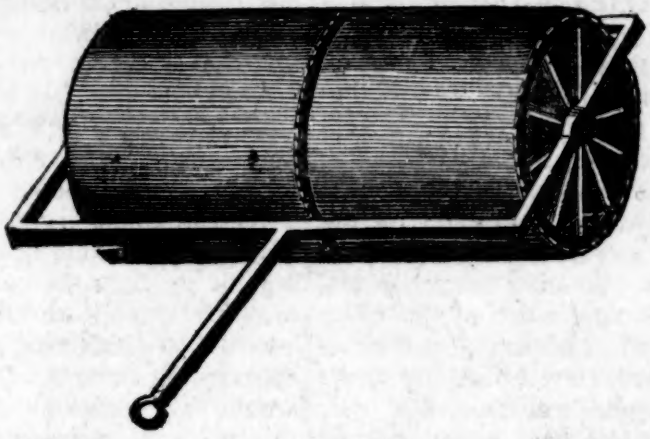
Portable French Burr Stone Mill.

Gentry's patent portable French burr stone mill, manufactured and sold at the Cincinnati Machine and Card Manufactory, on Walnut street; A. C. Brown, agent. We venture to recommend the above valuable mills to the public, with a full confidence of the effectiveness of their operation. The new and peculiar construction of these mills, renders them less expensive than any other mills, and enables them to perform much work with the proper power; and being constructed in the most simple and permanent manner, they are not liable to get out of order; they are also in a very compact and portable form, occupying a space of less than one yard square. We understand they will be warranted to perform well and do good work, with proper attention; and the public can rely on these mills making good flour as well as the best quality of meal.

We find also, manufactured and for sale, by the same respectable agent, an improved and very valuable Patent Metallic Stock Mill, for grinding the corn and cob together, and other grain, for stock feeders, which grinds very expeditiously, is portable, and of very durable construction. Also, an improved Patent Corn Shelling Machine, worked by horse or any other power, and which will shell from five hundred to one thousand bushels of corn per day. The same agent has for sale, also, Gentry's Patent Sweep Horse Power, either of which are calculated for operating the above, or any other kind of light machinery. Persons wishing to purchase any of the above mills or power, may see them in full operation by applying at the above establishment.

To Preserve Fence Posts, &c.

It is often the case where lime is used for plastering and other purposes, the siftings and refuse are thrown away as useless. But it is better to put it around fence and gate posts, as it will greatly preserve them from decay. Leached ashes are very good for the same purpose.



Roller.

Of the many useful implements which have been devised to aid the labor of agriculture, the Roller is less used among us than almost any other adapted to the products of our soil.

The roller is made of iron, stone or wood. We have seen it constructed of each material, but the cheapest for us is the wooden roller. An oak log with a frame and shafts appended, form one of the simplest construction, which any farmer almost may make. A medium length is about eight feet, in diameter twenty inches, and in weight from twelve to twenty hundred pounds; varying with the character of the soils. A heavier soil requires a heavier roller, a lighter soil a lighter one. The frame therefore should form a shallow box in which stone or other heavy substance may be placed to add to the weight if necessary. Sometimes the roller is divided into two parts, through the centre of these an iron rod is passed, forming the axis of the machine. The frame is attached to the outer ends, and where the two divisions come together. This plan is preferable when the weight of the roller is desired to be very great. The two objects to be obtained is great pressure with ease of draft. The weights being equal, the pressure will be greater on the ground covered by the roller, in proportion as the latter is smaller in diameter, but the ease of draft is diminished in an equal degree. It is preferable to give the desired weight by extraneous material sas mentioned, and to have them made with more regard to the ease of draft. The latter property is increased by making the roller about twenty-four inches in diameter, and attaching the shafts or tongue to a frame of equal length with the roller, elevated about eight or ten inches, by means of semi-circular ends; at the middle of the vonex curve of these end pieces is fastened the eye in which the gudgeon of the roller turns.

The use of the roller is to break down the clods after the harrow and plough, to pulverise and smooth the surface, to press the light soil around seed, especially around grass seed, and the lighter grains. It is serviceable also to press down the roots of grain which have been forced from their places by the frost. It renders light soil more compact, pressing the soil to seeds and grain, renders germination more certain, and promotes their growth —fills up cracks made by the abstraction of moisture, and by pressing the crown and partially burying it in the earth causes grain to send up more shoots.

It is of peculiar advantage in the preparation of the hemp ground, which since the invention of the hemp cradle, it is more important than ever to make as smooth and even as practicable. Hemp, and all small grain should have the benefit of the implement. Chaplet thus speaks of it:—

"The roller I have found to produce an excellent effect after the seed was

covered; it unites and levels the surface of the ground, and is particularly useful for porous and light soils, and for those earths of which the constituent particles are fine and light. If such soils have not received a suitable degree of firmness from the roller, high winds and rain are apt to carry off the upper layer, and to leave bare the roots of the plants. Another advantage arising from the application of the roller is, that the soil which has been subjected to it, presents fewer obstacles to the use of the scythe or of the sickle.

"When frosts have bound up the soil, and it has been again set free by thaws, the roots are left almost without support, as the earth scarcely adheres to them: the roller, applied to lands as soon as they are firm enough to admit of its being passed over them, is very useful as it reunites the earth to the roots, and repairs the injury done by the frosts and thaws."

From the Franklin Farmer.

Ashes.

The bountiful fertility of our Western lands has inspired us with too great a disregard for those prudent precautions elsewhere practised to prevent a deterioration of soils. We know that fields have been cropped for fifteen, twenty, and thirty years with the same grain, and are still considered the best of lands—and correctly so considered, so far as our information extends—but we have no means now of testing this opinion by an indisputable test; nor can we assert positively what would have been the present condition of such lands, had their powers been taxed less severely. But we are certain that a similar system of cultivation has caused what were once productive districts of Virginia, to be abandoned to the briars, and turned into common, and has rendered indispensable to the European farmer his laborious tillage and expensive manuring. It is at least a rational supposition, that similar results will follow this practice with us—and the time will come when the like expense of care, labor and manure will be as indispensable to the farmer of the United States, if the powers found in the soil are not preserved by proper means. Labor and capital are both wanting to attempt an exact imitation of European husbandry. It is not yet generally needed, but we should use to the best advantage those means of fertilizing the soil, and at the same time increasing its products, which every farm, to some extent, furnishes within its own limits—fertilizing matter is often thrown away at a *cost* which it would have repaid trebly, if expended in placing the same matter on a cultivated field at a proper time and manner. The stable manure is often thrown out carelessly, and left to rot the sills and door of the stable, to throw the door from its hinges or greatly interfere with its use, instead of being properly sheltered, and in season carried *out of the way* upon the corn ground or the root crop. These remarks are suggested by a wasteful act, as we thought it, which we saw but the other day—the cart of a farmer, hauling the leached ashes from his hopper to a depressed place in the public road, instead of spreading them on some cold and sour spot of wet ground, a little of which may be found on almost every farm, or reserving it for the wheat or rye field. The cost of placing it there would not have been greater than that of carrying it to the road. We extract the following paragraph on this subject from Chaptal's Agricultural Chemistry.

"The ashes produced by the combustion of wood in our common domestic fires, give rise to some very remarkable results. Without being leached, these ashes are much too active; but after having been deprived by the action of water of nearly all their salts, and employed in this state under the name of *buck ashes*, they still produce a great effect. The action of the buck ashes is most powerful upon moist lands and meadows, in which they not only facilitate the growth of useful plants, but if employed for several years they will free the soil from weeds. By the use of them, land con-

stantly drenched with water may be free from rushes, and prepared for yielding clover and other plants of good kinds. Wood ashes possess the double property of amending a wet and clayey soil, by dividing and drying it, and of promoting vegetation by the salts they contain."

Soils.

Every farmer should have some general knowledge of soils, and be acquainted with the nature of plants so as to adapt those he cultivates to the soil of his farm. This is an important branch of agricultural knowledge; every plant will flourish best in that congenial with its nature; and if farmers were acquainted with the art of adapting plants to soils, much manure might be saved; some soils require little or no manure to grow some kinds of plants; whereas, to grow other kinds of plants upon the same soil, requires much manure. The best index to the nature of soils are the plants that grow upon it; true, the chemist has it in his power to determine the nature of soils without this natural index, yet every farmer who knows the timber, underbrush, and plants, a soil spontaneously produces, decides at once upon its value for cultivation.

The principal soils are *silica*, sand or earth of flints; *lime*, or calcarious earth; *alumnia*, or clay; *magnesia*, a mineral substance; with these are blended vegetable and animal matter in a decomposing or decomposed state, and saline, acid, or alkaline combination.

The nature of *silica*, or sand, is dry and hot—*alumnia*, or clay, cold and wet—a proper mixture of the two improves both—all experience shows that manuring sandy lands with clay, or clay lands with sand, is best for grain or pulse. But it is not the best natural soil that the farmer ought to consider, but the depth of it, and what lies immediately under it. The farmer should never lose sight of these facts. For if the richest soil is only from four to six inches deep, and lies on a cold wet clay or stone, it will not be as fruitful as a poorer soil, that is deeper or lies upon a better under stratum. It is now generally agreed that gravel, if not too compact, is the best substratum to make land prolific.

The next best are dark gray, or sometimes called "*russet mould.*" But the worst of natural soils are the light and dark colored. These clays may all be known by the sight. There is however another, and perhaps as equally sure a test of good clays as that by sight—*smelling* and *feeling*. The best kinds of clay emit a pleasant scent on being dug or ploughed up, especially after rain; and being a just proportion of sand and clay intimately blended or mixed, will not stick much to the fingers on handling. We would, however, remark that the best soils in the world may be impoverished and completely worn out by an injudicious succession of crops, and especially if the ploughings are not frequently repeated before the seed is sown.

As said before, plants are a good index to soils, for we find, if we examine tracts of land not cultivated, we may also find that time has adapted different kinds of plants to most of the distinguishable varieties of soil; and though some belonging to one may, from some cause or other, be found on lands of a different quality, they seldom thrive or perfect their seed so as to become general. The great care of the farmer ought therefore to be, by proper mixtures, to reduce his land to that state of temperament, in which the extremes of hot and cold, wet and dry, are best corrected by each other; to give them every possible advantage flowing from the benign influences of sun and air; and to adopt such kind of plants as they afford in this state, the greatest nourishment too, and to renew their fertility by a judicious allowance of the most proper manures. Where these things are done, there are few spots so unfriendly to cultivation as not to repay his expenses and labor with a plentiful increase. But without these, the best of land will in time become a barren waste, or produce but little woods.

Clean Grounds.

The great secret of successful farming is. *never to allow any thing to grow that is not sown.* It is idle to expect good crops, while from one-half to two-thirds of the nutritive properties contained in the soil, and at least that action of its power of vegetation, is consumed by plants not cultivated, or in other words by weeds. Our meadows have light crops of grass, but is there not an ample one of moss, johnswort, crowfoot or daisy; we get fifteen bushels an acre of wheat, but has not too much vegetative power been expended by weeds? Look at our potato or corn fields, in which the planted crops are maintaining a doubtful struggle for existence with a vigorous growth of vile interlopers, too numerous to be named. Is it not a truth, that we allow one half of the actual value of our lands to be thus filched from us, and lose one-half our labor? Is it not true that we do not cultivate our lands as well as we ought, to get the greatest returns for the capital employed in agriculture? Better to till fifty acres as it should be, keeping the soil rich, clean and constantly improving, than to perpetuate the exhausting, improvident, unprofitable methods now so common, on two hundred acres.

Laconics for Farmers.

(Continued from No. 10.)

Milk Cows.—Salt milk cows nearly every morning while milking, to make them let down their milk when they are disinclined to do so.

Cream.—Set milk vessels as high up as possible, and there will be a larger quantity of cream.

Plaster of Paris or Gypsum.—Sow one bushel per acre on wheat in April, and it will tell well at Harvest.

Plaster, Ashes and Lime mixed.—Put of these a handful in each corn hill on poor land, and the ears will show the benefit of its application.

Manure heaps.—Cover them with eight inches of earth to prevent the escape of the fertilizing gases.

White Lead.—White lead pulverized and oil, excellent for all wounds.

Refuse Wool.—A very valuable manure.

Bones.—Very valuable manure and portable.

Lime.—Indispensable in the soil for the production of good wheat.

Ashes.—A very valuable application on the land.

Charcoal.—Excellent for the health of hogs.

Potatoes.—Cuttings produce more than whole potatoes,—they should be of full growth—plant them nine inches apart.

The Vine.—Procure either the Isabella or Catawba, and plant a small vineyard, and their produce will not be considered a useless one.

Manure.—Apply twenty loads per acre on potatoes on poor land.

Permanent Milkers.——Spaying heifers four to eight years old, one month after calving, will render them such milkers as not to fall off much for several years.

Corn Soaked.—This until fermented is good for hogs.

Calves.—To raise calves by hand, give them a pint of skimmed milk mixed with half a pint of corn meal thrice a day.

Ground Bones.—Best on dry loams, and first mixed for six weeks with earth—fifty bushels of bones with five loads of earth or clay—or forty bushels to five loads of common clay—about thirty bushels per acre.

Ashes.—Burn timber in woods to make ashes for wheat.

To raise Locust Trees.—Plant the seed an inch deep, after having, early in the spring, poured boiling water over them to soak for twenty-four hours.